

**WHAT IS CLAIMED IS:**

1. A multi-mode power supply device of a wireless earphone; the earphone being communicable bi-directionally with portable communication devices wirelessly through an antenna; the earphone having  
5 a battery set; in at least one side of the earphone; an internal of the earphone having a power management circuit; the battery set supplying power to the power management circuit; the power management circuit being used to control the power on or off.

2. The multi-mode power supply device of a wireless earphone as  
10 claimed in 1, wherein the communication devices are selected from portable mobile phones and vehicle used phones.

3. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein the battery set is a lithium battery set; electric power is transferred from the battery set to the power management circuit  
15 for controlling the power output of the battery set.

4. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein the power supply module is inserted into or buckled into one side of the earphone; and the power supply module is electrically connected to the power management circuit.

20 5. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein a suspender is capable of being inserted into or buckled into the groove of the earphone so that the suspender is positioned at one side of the power supply module; the suspender has a power supply module; when the suspender is combined to the earphone, the power  
25 management circuit is electrically connected to the power supply module.

6. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein one side of the earphone has a groove; the power supply module is installed in the suspender; one end of the suspender is inserted into the groove so as to position the suspender to the earphone,  
5 and thus the power management circuit is electrically connected to the battery set so as to supply power to the earphone.

7. The multi-mode power supply device of a wireless earphone as claimed in 5, wherein one side of the earphone has a groove; the power supply module is installed in the suspender; one end of the suspender is  
10 inserted into the groove so as to position the suspender to the earphone, and thus the power management circuit is electrically connected to the battery set to supply power to the earphone.

8. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein the power supply module is a chargeable battery.

15 9. The multi-mode power supply device of a wireless earphone as claimed in 5, wherein the power supply module is a chargeable battery.

10. The multi-mode power supply device of a wireless earphone as claimed in 1, wherein the power management circuit has a check loop for preventing power from flowing along a reverse direction so as to protect  
20 the components within the earphone.

11. The multi-mode power supply device of a wireless earphone as claimed in 3, wherein the power management circuit has a check loop for preventing power from flowing along a reverse direction so as to protect the components within the earphone.